

SECTION FIVE

MITIGATION MONITORING AND REPORTING PROGRAM

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Section 21081.6 of the California Environmental Quality Act (CEQA) requires a public agency to adopt a reporting or monitoring program in those cases where the public agency finds that changes or alterations have been required in, or incorporated into, a project, and that those changes mitigate or avoid a significant effect on the environment. A public agency may delegate the monitoring or reporting responsibilities to another public agency or private entity that accepts the delegation, but the lead agency remains responsible for ensuring that the mitigation measures have been implemented (CEQA Guidelines § 15097).

Table 5-1 identifies each mitigation measure identified in the Program Environmental Impact Report, and identifies the monitoring or reporting program, and timing for such efforts.

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**Table 5-1
Mitigation Monitoring and Reporting Program (MMRP)**

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
3.1 Aesthetics			
3.1-4	<p>The following guidelines and standards will be followed in selecting and designing any outdoor lighting:</p> <ol style="list-style-type: none"> 1. All outdoor lights including parking lot lights, landscaping, security, path and deck lights should be fully shielded, full cutoff luminaries. 2. Complete avoidance of all outdoor up-lighting for any purpose. 3. Avoidance of tree mounted lights unless they are fully shielded and pointing down towards the ground or shining into dense foliage. Ensure compliance over time. 4. Complete avoidance of up-lighting and unshielded lighting in water features such as fountains or ponds. 	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.2 Agriculture and Forest Resources			
3.2-1	<p>The City will encourage property owners outside the City limits but within the SUDP/SOI to maintain their land in agricultural production until the land is converted to urban uses. The City will also work cooperatively with land trusts and other non-profit organizations to preserve agricultural land in the region. This may include the use of conservation easements. Infill development will be preferred and encouraged over fringe development. Sequential and contiguous development is also preferred and encouraged over leap-frog development.</p>	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.3 Air Quality			
3.3-1a	<p>For any phase of construction in which an area greater than 22 acres, in accordance with Regulation VIII of the SJVAPCD, will be disturbed on any one day, the project developer(s) shall implement the following measures:</p>	<p>Implementation: City of Merced/SJVAPCD</p>	Ongoing / Prior to Approval of Discretionary Projects

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<ol style="list-style-type: none"> 1. Basic fugitive dust control measures are required for all construction sites by SJVAPCD Regulation VIII. 2. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. 3. Traffic speeds on unpaved roads shall be no greater than 15 mph. 4. Install wind breaks at windward side(s) of construction areas. 	<p style="text-align: center;">Monitoring: Planning Division</p>	
3.3-1b	<p>To reduce emissions and thus reduce cumulative impacts, the City of Merced shall consider adoption of an ordinance requiring the following measures to be implemented in conjunction with construction projects within the City:</p> <ol style="list-style-type: none"> 1. The idling time of all construction equipment used in the plan area shall not exceed ten minutes when practicable. 2. The hours of operation of heavy-duty equipment shall be minimized when practicable. 3. All equipment shall be properly tuned and maintained in accord with manufacturer's specifications when practicable. 4. When feasible, alternative fueled or electrical construction equipment shall be used at the project site. 5. The minimum practical engine size for construction equipment shall be used when practicable. 6. When feasible, electric carts or other smaller equipment shall 	<p style="text-align: center;">Implementation: City of Merced/SJVAPCD</p> <p style="text-align: center;">Monitoring: Planning Division</p>	<p style="text-align: center;">Ongoing / Prior to Approval of Discretionary Projects</p>

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	<p>be used at the project site.</p> <p>7. Gasoline-powered equipment shall be equipped with catalytic converters when practicable.</p>		
3.3-2	<p>The following BACT (Best Available Control Technology) installations and mitigation shall be considered for new discretionary permits, to the extent feasible as determined by the City:</p> <ul style="list-style-type: none"> • Trees shall be carefully selected and located to protect building(s) from energy consuming environmental conditions, and to shade paved areas when it will not interfere with any structures. Trees should be selected to shade paved areas that will shade 50% of the area within 15 years. Structural soil should be used under paved areas to improve tree growth. • If transit service is available to a project site, development patterns and improvements shall be made to encourage its use. If transit service is not currently available, but is planned for the area in the future, easements shall be reserved to provide for future improvements such as bus turnouts, loading areas, route signs and shade structures. • Multi-story parking facilities shall be considered instead of parking lots to reduce exposed concrete surface and save green space. • Sidewalks and bikeways shall be installed throughout as much of any project as possible, in compliance with street standards, and shall be connected to any nearby existing and planned open space areas, parks, schools, residential areas, commercial areas, etc., to encourage walking and bicycling. 	<p>Implementation: City of Merced/SJVAPCD</p> <p>Monitoring: Planning Division</p>	<p>Ongoing / Prior to Approval of Discretionary Projects</p>

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	<ul style="list-style-type: none"> • Projects shall encourage as many clean alternative energy features as possible to promote energy self-sufficiency. Examples include (but are not limited to): photovoltaic cells, solar thermal electricity systems, small wind turbines, etc. Rebate and incentive programs are offered for alternative energy equipment. <p>As many energy-conserving features as possible shall be included in the individual projects. Energy conservation measures include both energy conservation through design and operational energy conservation. Examples include (but are not limited to):</p> <ul style="list-style-type: none"> • Increased energy efficiency (above California Title 24 Requirements) • Energy efficient windows (double pane and/or Low-E) • Use Low and No-VOC coatings and paints • High-albedo (reflecting) roofing material • Cool Paving. “Heat islands” created by development projects contribute to the reduced air quality in the valley by heating ozone precursors • Radiant heat barrier • Energy efficient lighting, appliances, heating and cooling systems • Install solar water-heating system(s) • Install photovoltaic cells 		

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	<ul style="list-style-type: none"> • Install geothermal heat pump system(s) • Programmable thermostat(s) for all heating and cooling systems • Awnings or other shading mechanism for windows • Porch, patio and walkway overhangs • Ceiling fans, whole house fans • Utilize passive solar cooling and heating designs (e.g. natural convection, thermal flywheels) • Utilize daylighting (natural lighting) systems such as skylights, light shelves, interior transom windows etc. • Electrical outlets around the exterior of the unit(s) to encourage use of electric landscape maintenance equipment • Bicycle parking facilities for patrons and employees in a covered secure area. Bike storage should be located within 50' of the project's entrance. Construct paths to connect the development to nearby bikeways or sidewalks • On-site employee cafeterias or eating areas • Low or non-polluting landscape maintenance equipment (e.g. electric lawn mowers, reel mowers, leaf vacuums, electric trimmers and edger's, etc.) • Pre-wire the unit(s) with high speed modem connections/DSL and extra phone lines • Natural gas fireplaces (instead of wood-burning fireplaces or 		

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	heaters) <ul style="list-style-type: none"> • Natural gas lines (if available) and electrical outlets in backyard or patio areas to encourage the use of gas and/or electric barbecues • Low or non-polluting incentives items should be provided with each residential unit (such items could include electric lawn mowers, reel mowers, leaf vacuums, gas or electric barbecues, etc.) 		
3.4 Biological Resources			
3.4-1a	<p>Vernal Pools and Vernal Pool Associates</p> <p>To protect vernal pools and species associated with vernal pools including vernal pool smallscale, succulent owl's-clover, pincushion navarretia, Colusa grass, hairy Orcutt grass, spiny-sepaled button celery, San Joaquin Orcutt grass, Greene's tuctoria, Conservancy fairy shrimp, vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, California linderiella, and Molestan blister beetle, surveys shall be conducted to determine the presence of vernal pools prior to or concurrent with application for annexation in areas identified as having potential habitat.</p> <p>Surveys to detect vernal pools are most easily accomplished during the rainy season or during early spring when pools contain water, although surveys shall not be limited to a particular season or condition. If vernal pools are found to occur on a project site, the pools and a 100 foot-wide buffer around each pool or group of pools will be observed. If the vernal pools and buffer areas cannot be avoided, then the project proponent must consult with and obtain authorizations from, but not limited to, the California Department of Fish and Game, the United States Fish and Wildlife Service, the Army Corps of Engineers, and the State Water Resources Quality</p>	<p>Implementation: City of Merced / USFWS / CDFG / ACOE / RWQCB</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	Control Board. Consultation and authorizations may require that additional surveys for special-status species be completed. Because there is a federal policy of no net loss of wetlands, mitigation to reduce losses and compensation to offset losses to vernal pools and associated special-status species will be required.		
3.4-1b	<p>Special-Status Plants</p> <p>To protect special-status plants, the City shall ensure that a botanical survey be conducted for projects containing habitat suitable for special-status plant species. Surveys shall be conducted by a qualified biologist or botanist during the appropriate flowering season for the plants and shall be conducted prior to issuance of a grading or building permit for the project. If special-status plants are found to occur on the project site, the population of plants shall be avoided and protected. If avoidance and protection is not possible, then a qualified biologist will prepare a mitigation and monitoring plan for the affected species. The plan shall be submitted to the CDFG and/or the USFWS for review and comment. Details of the mitigation and monitoring plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Removing and stockpiling topsoil with intact roots and seed bank in the disturbance area, and either replacing the soil in the same location after construction is complete or in a different location with suitable habitat; or • Collect plants, seeds, and other propogules from the affected area prior to disturbance. After construction is complete, then the restored habitat will be replanted with propogules or cultivated nursery stock; or 	<p>Implementation: City of Merced / USFWS / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

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3.4-1c	<p>Valley Elderberry Longhorn Beetle</p> <p>Until such time that the Valley elderberry longhorn beetle (VELB) is delisted as a federally threatened species, to protect the species, the project proponent shall ensure that a survey for elderberry bushes be conducted by a qualified biologist at each project site containing habitat suitable for VELB prior to the issuance of a grading permit or building permit. If elderberry bushes are found, the project proponent shall implement the measures recommended by the biologist, which shall contain the standardized measures adopted or otherwise authorized by the USFWS.</p>	<p>Implementation: City of Merced / USFWS</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.4-1d	<p>Burrowing Owls</p> <p>To protect burrowing owls on proposed projects where suitable habitat exists, the following shall be implemented:</p> <ul style="list-style-type: none"> To protect burrowing owls, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain grasslands, fallowed agricultural fields, or fallow fields along roadsides, railroad corridors, and other locations prior to grading. If, during a pre-construction survey, burrowing owls are found to be present, the project proponent shall implement the measures recommended by the biologist and include the standardized avoidance measures of CDFG. 	<p>Implementation: City of Merced / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.4-1e	<p>Special-Status Birds</p> <p>To protect raptors and other special-status birds on proposed projects where suitable habitat exists, the following measures shall be implemented:</p> <ul style="list-style-type: none"> Trees identified with occupied nests of special status birds which are scheduled to be removed because project 	<p>Implementation: City of Merced / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

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	<p>implementation shall be removed only during the non-breeding season, or unless it is determined by a qualified biologist that the nest is no longer occupied.</p> <ul style="list-style-type: none"> • Prior to construction, but not more than 14 days before grading, demolition, or site preparation activities, a qualified biologist shall conduct a preconstruction nesting survey to determine the presence of nesting raptors. Activities taking place outside of the breeding season (typically February 15 through August 31) do not require a survey. If active raptor nests are present within the construction zone or within 250-feet of the construction zone, temporary exclusion fencing shall be erected at a distance to be determined by a qualified raptor biologist in consultation with CDFG. Clearing and construction operations within this area shall be postponed until juveniles have fledged and there is no evidence of a second nesting attempt determined by the biologist. • If nesting Swainson’s hawks are observed during field surveys, then consultation with the CDFG regarding Swainson’s hawk mitigation guidelines shall be required. The guidelines include, but are not limited to, buffers of up to one quarter mile, monitoring of the nest by a qualified biologist, and mitigation for the loss of foraging habitat. • To avoid impacts to common and special-status migratory birds pursuant to the Migratory Bird Treaty Act and CDFG codes, a nesting survey shall be conducted prior to construction activities if the work is scheduled between February 15 and August 31. If migratory birds are identified nesting within the construction zone, a temporary buffer around the nest site will be designated by a qualified biologist in consultation with CDFG. No construction activity may occur within this buffer until a qualified biologist has determined that the young have 		

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	<p>fledged. A qualified biologist may modify the size of the buffer based on site conditions and the bird's apparent acclimation to human activities. If the buffer is modified, the biologist would be required to monitor stress levels of the nesting birds for at least one week after construction commences to ensure that project activities would not cause its abandonment or loss of eggs or young. At any time the biologist shall have the right to implement a larger buffer if stress levels are elevated to the extent that could cause nest abandonment and/or loss of eggs or young.</p>		
3.4-1f	<p>Special-Status Amphibians</p> <p>To protect California tiger salamander and western spadefoot on proposed projects where suitable habitat exists, the following shall be implemented:</p> <ul style="list-style-type: none"> To protect special-status amphibians, a project specific site assessment report, including protocol-level surveys, when indicated, shall be prepared by a qualified and permitted biologist at all project sites that contain appropriate habitat. If this site assessment report reveals that special status amphibians are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS or the CDFG. 	<p>Implementation: City of Merced / USFWS / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.4-1g	<p>Special-Status Reptiles</p> <p>To protect western pond turtle and giant garter snake on proposed projects where suitable habitat exists, the following shall be implemented:</p> <ul style="list-style-type: none"> To protect special-status reptiles, preconstruction surveys shall be conducted by a qualified biologist at all project sites that 	<p>Implementation: City of Merced / USFWS / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>contain appropriate habitat. If, during a pre-construction survey, special-status reptiles are found to be present, the project proponent shall implement the measures recommended by the biologist and standardized measures adopted by the USFWS or the CDFG.</p>		
3.4-1h	<p>Special-Status Fish</p> <p>To protect special-status fish, including hardhead, on proposed projects where suitable habitat exists, the following shall be implemented:</p> <ul style="list-style-type: none"> To protect special-status fish, a habitat assessment will be conducted to ascertain whether suitable habitat for special-status fish species is present. Should suitable habitat for special-status fish species (such as hardhead) be identified, the California Department of Fish and Game will be consulted to determine whether preconstruction surveys are warranted. 	<p>Implementation: City of Merced / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.4-1i	<p>Special-Status Mammals</p> <p>To protect Merced kangaroo rat, western mastiff bat, western red bat, hoary bat, Yuma myotis, San Joaquin pocket mouse, American badger, and San Joaquin kit fox on proposed projects where suitable habitat exists, the following shall be implemented:</p> <ul style="list-style-type: none"> To protect special-status mammals, a habitat assessment shall be conducted on each project site prior to construction to ascertain whether habitat suitable for supporting special status mammals exists on the project site. If suitable habitat is present, preconstruction surveys shall be conducted by a qualified biologist at all project sites that contain appropriate habitat according to established standards or protocols of the CDFG or USFWS, if available for that species. If during the 	<p>Implementation: City of Merced / USFWS / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	preconstruction survey, special-status mammals are found to be present, the project proponent shall implement the measures recommended by the biologist and measures adopted by the USFWS or the CDFG.		
3.4-2	<p>Streambed Alteration Agreement</p> <p>To minimize impacts to riparian habitat and other sensitive natural communities, the following the measures shall be implemented when streambed alterations are proposed:</p> <ul style="list-style-type: none"> • The project proponent shall have a qualified biologist map all riparian habitat, or other sensitive natural communities. To the extent feasible and practicable, all planned construction activity shall be designed to avoid direct effects on these areas. • In those areas where complete avoidance is not possible, then all riparian habitat, or other sensitive natural communities, shall be mitigated on a “no-net-loss” basis in accordance with either CDFG regulations and/or a Section 1602 Streambed Alteration Agreement, if required. Habitat mitigation shall be replaced at a location and with methods acceptable to the CDFG. 	<p>Implementation: City of Merced / CDFG</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.4-3a	<p>Conduct a delineation of Waters of the U.S. and Wetlands (WOUS/Wetlands) and Obtain Permits.</p> <p>In order to determine if there are wetlands or waters of the U.S. on a proposed project site which fall under the U.S. Army Corps of Engineers (Corps) jurisdictional authority under Section 404 of the CWA, a delineation of the Waters of the U.S. and wetlands shall be performed and submitted to the Corps for verification prior to annexation.</p>	<p>Implementation: City of Merced / ACOE / RWQCB</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

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	A Section 404 permit and a Section 401 Water Quality Certification or Waiver of Waste Discharge shall be acquired from the Corps and the Regional Water Quality Control Board (RWQCB) and a Section 1602 Streambed Alteration Agreement from DFG respectively prior to the onset of construction related activities.																		
3.4-3b	Any jurisdictional waters that would be lost or disturbed due to implementation of any proposed project within the plan area shall be replaced or rehabilitated on a “no-net-loss” basis in accordance with the Corps’ and the RWQCB mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement if required shall be at a location and by methods agreeable to the Corps, the RWQCB, and the City of Merced. The project applicant shall abide by the conditions of any executed permits.	<p>Implementation: City of Merced / ACOE / RWQCB</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects																
3.11 Noise																			
3.11-4	<p>Table 3.11-13 provides criteria for evaluating construction vibration impacts. If construction activities include the use of pile drivers or large vibratory compactors, an analysis of potential vibration impacts should be conducted. The vibration impacts should not exceed a peak particle velocity of 0.1 inches/second.</p> <p>Table 3.11-13 Effects of Vibration on People and Buildings</p> <table border="1" data-bbox="361 1084 1157 1359"> <thead> <tr> <th data-bbox="361 1084 522 1159">Peak Particle Velocity inches/second</th> <th data-bbox="522 1084 667 1159">Peak Particle Velocity mm/second</th> <th data-bbox="667 1084 898 1159">Human Reaction</th> <th data-bbox="898 1084 1157 1159">Effect on Buildings</th> </tr> </thead> <tbody> <tr> <td data-bbox="361 1159 522 1211">0-.006</td> <td data-bbox="522 1159 667 1211">0.15</td> <td data-bbox="667 1159 898 1211">Imperceptible by people</td> <td data-bbox="898 1159 1157 1211">Vibrations unlikely to cause damage of any type</td> </tr> <tr> <td data-bbox="361 1211 522 1263">.006-.02</td> <td data-bbox="522 1211 667 1263">0.5</td> <td data-bbox="667 1211 898 1263">Range of Threshold of perception</td> <td data-bbox="898 1211 1157 1263">Vibrations unlikely to cause damage of any type</td> </tr> <tr> <td data-bbox="361 1263 522 1359">.08</td> <td data-bbox="522 1263 667 1359">2.0</td> <td data-bbox="667 1263 898 1359">Vibrations clearly perceptible</td> <td data-bbox="898 1263 1157 1359">Recommended upper level of which ruins and ancient monuments should be subjected</td> </tr> </tbody> </table>	Peak Particle Velocity inches/second	Peak Particle Velocity mm/second	Human Reaction	Effect on Buildings	0-.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type	.006-.02	0.5	Range of Threshold of perception	Vibrations unlikely to cause damage of any type	.08	2.0	Vibrations clearly perceptible	Recommended upper level of which ruins and ancient monuments should be subjected	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
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0-.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type																
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Mitigation #	Mitigation Measure				Implementing Agency / Monitoring Agency	Timing
	0.1	2.54	Level at which continuous vibrations begin to annoy people	Virtually no risk of architectural damage to normal buildings		
	0.2	5.0	Vibrations annoying to people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings		
	1.0	25.4		Architectural Damage		
	2.0	50.4		Structural Damage to Residential Buildings		
	6.0	151.0		Structural Damage to Commercial Buildings		
	<i>Source: Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic, Caltrans 1976.</i>					
3.15 Transportation/Traffic						
3.15-1a	<p>Table 3.15-4 indicates the recommended number of travel lanes for several of the road segments analyzed to keep traffic levels-of-service at the City’s preferred LOS “D” at General Plan buildout. Implementation of the following projects will permit the City to manage its traffic volumes at Level of Service “D”, or better:</p> <ol style="list-style-type: none"> 1. SR 59 from 16th to Olive (2 lanes to 6 lanes) Existing LOS=F / Future LOS=D 2. SR 59 from Olive to Yosemite (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D 3. SR 59 from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D 4. SR 59 from Cardella to Bellevue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D 5. SR 59 from Bellevue to Old Lake (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C 				<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	As Appropriate

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	<p>6. SR 59 from Old Lake to Castle Farms (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D</p> <p>7. "R" Street from Old Lake to Area of Influence Boundary (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=C+</p> <p>8. "M" Street from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS=none / Future LOS = C+</p> <p>9. "M" Street from Bellevue to Old Lake (Future Extension 0 lanes to 4 lanes) Existing LOS=none / Future LOS = C+</p> <p>10. Martin Luther King Jr. Way/South SR 59 from Roduner to Mission (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p> <p>11. Martin Luther King Jr. Way/South SR 59 from Mission to Gerard (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p> <p>12. "G" Street from Yosemite to Cardella (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+</p> <p>13. "G" Street from Cardella to Bellevue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p> <p>14. "G" Street from Bellevue to Old Lake (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D</p> <p>15. "G" Street from Old Lake to Snelling (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C</p> <p>16. Parsons/Gardner from Childs to SR 140 (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D</p>		

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	17. Parsons/Gardner from Bear Creek to Olive (2 lanes to 4 lanes) Exiting LOS=C+ / Future LOS=D		
	18. Parsons/Gardner from Olive to Yosemite (2 lanes to 6 lanes) Exiting LOS=D / Future LOS=D		
	19. Parsons/Gardner from Yosemite to Cardella (2 lanes to 4 lanes) Exiting LOS=C+ / Future LOS=D		
	20. Parsons/Gardner from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D		
	21. Parsons/Gardner from Bellevue to Old Lake (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+		
	22. Parsons/Gardner from Old Lake to Golf Club (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=D		
	23. Campus Parkway SR 99/Mission to Childs (Future Extension 0 lanes to 6 lanes) Existing LOS= none / Future LOS=D		
	24. Campus Parkway from Childs to SR 140 (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D		
	25. Campus Parkway from SR 140 to Olive (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D		
	26. Campus Parkway from Olive to Yosemite (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D		
	27. Campus Parkway from Yosemite to Cardella (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D		

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	<p>28. Campus Parkway from Cardella to Bellevue (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D</p> <p>29. Tyler Road from Childs to Mission (Future Extension 0 lanes to 2 lanes) Existing LOS= none / Future LOS=D</p> <p>30. Old Lake Road SR 59 to “R” Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+</p> <p>31. Old Lake Road “R” Street to “M” Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C</p> <p>32. Old Lake Road “M” Street to “G” Street Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C</p> <p>33. Bellevue Road from Franklin to Thornton (2 lanes to 4 lanes Divided Expressway Existing LOS=C+ / Future LOS= F</p> <p>34. Bellevue Road (Atwater-Merced Expressway) from Thornton to SR 59 (2 lanes to 4 lanes (Divided Expressway) Existing LOS=C+ / Future LOS=F</p> <p>35. Bellevue Road from Parsons/Gardner to Campus Parkway (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D</p> <p>36. Cardella Road from SR 59 to “R” Street (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D</p> <p>37. Cardella Road from “M” Street to “G” Street (2 lanes to 4 lanes) Existing LOS= C+ / Future LOS=D</p> <p>38. Cardella Road from “G” Street to Parsons/Gardner (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D</p>		

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>39. Cardella Road from Parsons/Gardner to Campus Parkway (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=D</p> <p>40. Yosemite Avenue from Parsons/Gardner to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D</p> <p>41. Olive Avenue West of Hwy 59 (Santa Fe Avenue) (4 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C</p> <p>42. SR 99 from Atwater/Merced Expressway to Mariposa (4 lanes to 6 lanes through Merced) Existing LOS=C+ and D / Future LOS=C+ and D</p> <p>43. Childs Avenue from SR 59 to Tyler (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p> <p>44. Childs Avenue from Parsons/Gardner to Coffee (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p> <p>45. Childs Avenue from Coffee to Campus Parkway (2 lanes to 4 lanes) Existing LOS=D / Future LOS=D</p> <p>46. Childs Avenue from Campus Parkway to Tower (Future Extension 0 lanes to 4 lanes) Existing LOS= none / Future LOS=C+</p> <p>47. Dickerson Ferry/Mission Avenue from Thornton to West Avenue (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p> <p>48. Dickerson Ferry/Mission Avenue from West Avenue to SR 59 (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+</p>		

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>49. Dickerson Ferry/Mission Avenue from SR 50 to Tyler (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+</p> <p>50. Dickerson Ferry/Mission Avenue from SR 99 to Coffee (Future Campus Parkway)(2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=C+</p> <p>51. Dickerson Ferry/Mission Avenue from Tyler to Henry (2 lanes to 6 lanes) Existing LOS=C+ / Future LOS=D</p> <p>52. Dickerson Ferry/Mission Avenue from Coffee to Tower (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=C+</p> <p>53. Thornton from Dickerson Ferry/Mission to SR 140 (2 lanes to 4 lanes) Existing LOS=C+ / Future LOS=D</p>		
3.15-1b	<p>Traffic studies shall be performed to satisfy the requirements of the California Environmental Quality Act (CEQA) for all proposed General Plan Amendments which intensify development, proposed specific plans, annexations, and other projects at the discretion of the Development Services Department. Future traffic studies shall generally conform to any guidelines established by the City. The studies shall be performed to determine, at a minimum, opening-day impacts of proposed projects and as confirmation or revision of the General Plan. The studies shall address queue lengths and (at a minimum) peak-hour traffic signals warrants in addition to LOS and provide appropriate mitigations. At the discretion of the City, a complete warrant study in accordance with the most recent edition of the California Manual on Uniform Traffic Control Devices may be required to evaluate the need for traffic signals.</p>	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	<p>Ongoing / Prior to Approval of Discretionary Projects</p>

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
3.17 Greenhouse Gas Emissions (Global Climate Change)			
3.17-1a	Per Sustainable Development Implementing Action SD 1.1.g of the Merced Vision 2030 General Plan, the City of Merced will work closely with the SJVAPCD to develop and implement uniform standards for determining “thresholds of significance” for greenhouse gas impacts for use in the City’s CEQA review process. The SJVAPCD has issued its “Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New Projects Under CEQA”. The City will use the recommended threshold of Best Performance Measures and/or 29 percent below Business-As-Usual for new development with the City of Merced.	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.17-1b	Per Sustainable Development Implementing Action SD 1.1.g of the Merced Vision 2030 General Plan, and as required by recent changes in CEQA, the City shall address the issue of Climate Change and Greenhouse Gas Emissions in environmental documents prepared by the City. Techniques and best practices for evaluation these issues are currently being developed by various government agencies and interest groups and the City will keep track of these developments and endeavor to remain up-to-date in evaluation methods.	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects
3.17-1c	<p>Per Sustainable Development Policy SD 1.7 and Implementing Action SD 1.7.a of the Merced Vision 2030 General Plan, the City will develop a Climate Action Plan (CAP) that identifies greenhouse gas emissions within the City as well as ways to reduce those emissions. The Plan will parallel the requirements adopted by the California Air Resources Board specific to this issue. The City will include the following key items in the Plan:</p> <ul style="list-style-type: none"> • Inventory all known, or reasonably discoverable, sources of greenhouse gases in the City, • Inventory the greenhouse gas emissions level in 1990, the 	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Following adoption of the General Plan and General Plan EIR

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>current level, and that projected for the year 2020, and</p> <ul style="list-style-type: none"> • Set a target for the reduction of emissions attributable to the City’s discretionary land use decisions and its own internal government operations. • Within one year of adoption of the CAP, the City should complete a review of its existing policies and ordinances in order to ensure implementation of the CAP. 		
3.17-1d	<p>Per Sustainable Development Implementing Action SD 1.7.c of the Merced Vision 2030 General Plan, the City shall consider the following measures for new development:</p> <ul style="list-style-type: none"> • When approving new development, require truck idling to be restricted during construction. • Require new development to implement the following design features, where feasible, many of these features are included as draft Best Performance Measures established by the SJVAPCD for new development: <ul style="list-style-type: none"> 1. Recycling: <ul style="list-style-type: none"> ▪ Design locations for separate waste and recycling receptacles; ▪ Reuse and recycle construction and demolition waste; ▪ Recover by-product methane to generate electricity; and, ▪ Provide education and publicity about reducing waste and available recycling services. 2. Promote pedestrian, bicycle and transit modes of travel through informational programs and provision of 	<p>Implementation: City of Merced</p> <p>Monitoring: Planning Division</p>	Ongoing / Prior to Approval of Discretionary Projects

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>amenities such as transit shelters, secure bicycle parking and attractive pedestrian pathways.</p> <p>3. Large canopy trees should be carefully selected and located to protect the building(s) from energy consuming environmental conditions, and to shade 50% of paved areas within 15 years.</p> <p>4. Encourage mixed-use and high-density development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods.</p> <p>5. Impose measures to address the "urban heat island" effect by, e.g. requiring light-colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots and shade trees on the south and west sides of new or renovated buildings.</p> <p>6. Transportation and motor vehicle emission reduction:</p> <ul style="list-style-type: none"> ▪ Use low or zero-emission vehicles, including construction vehicles; ▪ Create car sharing programs; ▪ Create local "light vehicle" networks, such as neighborhood electric vehicle (NEV) systems; ▪ Provide shuttle service to public transit; ▪ During construction, post signs that restrict truck idling; ▪ Set specific limits on idling time for commercial 		

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>vehicles, including delivery and construction vehicles;</p> <ul style="list-style-type: none"> ▪ Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights; and, ▪ Assess transportation impact fees on new development in order to facilitate and increase public transit service. <p>7. Water Use Efficiency:</p> <ul style="list-style-type: none"> ▪ Use of both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; “Save Water” signs near water faucets; ▪ Create water efficient landscapes; ▪ Use gray water. (Gray water is untreated household waste water from bathtubs, showers, bathroom wash facilities, and water from washing machines); and, ▪ Provide education about water conservation and available programs and incentives. <p>8. Energy Efficiency:</p> <ul style="list-style-type: none"> ▪ Automated control system for heating/air conditioning and energy efficient appliances; ▪ Utilize lighting controls and energy-efficient lighting 		

Mitigation #	Mitigation Measure	Implementing Agency / Monitoring Agency	Timing
	<p>in buildings;</p> <ul style="list-style-type: none"> ▪ Use light colored roof materials to reflect heat; ▪ Take advantage of shade (save healthy existing trees when feasible), prevailing winds, landscaping and sun screens to reduce energy use; ▪ Install solar panels on carports and over parking areas; ▪ Increase building energy efficiency percent beyond Title 24 requirements. In addition implement other green building design ((i.e., natural daylighting and on-site renewable, electricity generation); and ▪ Require that projects use efficient lighting 		